

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 October 2005 (06.10.2005)

PCT

(10) International Publication Number
WO 2005/092963 A1

(51) International Patent Classification⁷: **C08J 11/24**

(21) International Application Number:
PCT/KR2005/000851

(22) International Filing Date: 24 March 2005 (24.03.2005)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2004-0020944 26 March 2004 (26.03.2004) KR
10-2004-0023579 6 April 2004 (06.04.2004) KR

(71) Applicants and

(72) Inventors: **KIM, do gyun** [KR/KR]; 104-603, Mabuk-ri Yeonwonmaeul Hyundai Apt., Guseong-eup Yongin-si, Gyeonggi-do 449-937 (KR). **KIM, hyosung** [KR/KR]; 104-603, Mabuk-ri Yeonwonmaeul Hyundai Apt., Guseong-eup Yongin-si, Gyeonggi-do 449-937 (KR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RECYCLED METHOD FOR A WASTED POLYMER WHICH IS MIXED POLYESTER POLYAMIDE AND RECLAIMED MATERIALS THEREOF

(57) **Abstract:** The present invention relates to a recycling method of a mixed waste of polyester and polyamide (hereinafter, referred to as "mixed waste") in which polyesters including polyethylene terephthalate and polyamides are inseparable from one another. In accordance with the recycling method of the present invention, it is possible to prepare a solid block polymer having an acid value of 1 to 150 mgKOH/g, a weight average molecular weight of 3,000 to 50,000 and a softening point of 10 to 150°C, or a liquid polyester-amide block polymer composition having good compatibility, solubility and dispersibility. In addition, the polymer having an acid value of more than 20 mgKOH/g is reacted with a basic compound to form a neutralized salt which is then used to prepare a water-soluble polyester-amide block polymer composition. The prepared water-soluble polyester-amide block polymer composition can be utilized as industrially useful material such as synthetic resin fine particles, microcapsules, adsorbents, polymerization toner binders for electron photography, fiber processing agents, sizing agents for use in paper-making and paper strength agents, wastewater treatment agents, dispersants, cement admixtures, inkjet ink binders, epoxy resin curing agents and modifiers, water-dispersible epoxy resin curing agents and modifiers. The solid or liquid polyester-amide block polymer composition having an acid value of less than 10 mgKOH/g can be employed as industrially useful material such as printer ink, coating materials, powder paints, adhesives, hot melt adhesives, binders for toner manufactured by grinding methods, waterproofing agents, unsaturated polyester-amide resins, and polyurethane resins.

WO 2005/092963 A1